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AGRICULTURAL MEMORANDUM NO 443

Erisyphe Spores in London - Effect of wind

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Data are available of the average daily catch of erisyphe spores at St Mary's Hospital Paddington for the years 1961-1970.

Examining the data for June and July and allocating each day to a wind direction as determined for the previous pollen analysis we find:-

	Total	Occasions	Average
SW	7810	253	31
NW	6400	151	42
NE	3480	105	33
SE	1100	47	23
Variable	1330	50	27

Comparing this to the percentage of barley grown (on an average basis) in the surrounding counties we find for 1968:-

SW	Surrey and ½ Hampshire	29%
NW	Hertford	36%
NE	Essex	31%
SE	Kent	19%

It is therefore not unreasonable to assume that the majority of these spores are those of barley mildew.

Comparing the daily values of SW'ly days together with those for NW'ly winds (weighting factor 0.75) with the midday wind speeds at Kew we find the following means:-

Wind Range (knots)	Mean catch	Wind Range	Mean catch
0-2	22	11-13	33
1-3	26	12-14	34
2-4	22	13-15	29
3-5	27	14-16	35
4-6	27	15-17	35
5-7	30	16-18	33
6-8	32	17-19	27
7-9	32	18-20	19
8-10	34	19-21	14
9-11	32	20-22	18
10-12	35	21-23	18

Wind speed increases the release of spores but also increases their disposal. It is therefore not surprising that catches in London, some distance from any major source, show a pattern which can be summarized as follows:-

An increase of catch with increase of midday wind speed over the range 0-8 knots.

A plateau of catch over the range 8-16 knots.

A decrease of catch with further increase of wind over 16 knots.

Any comments or suggestions on this paper should be referred to the author.

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